

REMARKS

The claims are 1-26.

Preliminarily, the examiner is thanked for his forbearance and for his kind suggestions.

The claims were rejected only under 35 USC § 112, paragraph 2, for reasons of lack of proper antecedent bases and other reasons of indefiniteness and errors of a typographical nature.

It is believed (hopefully) that these matters have been taken care of in the foregoing amendments to the claims.

It is to be noted that in the definition  $R^2$  in claim 1, "CN, a straight or branched  $C_1$  to  $C_2$ -alkyl, OR<sup>21</sup>" were inadvertently omitted. Support for this amendment can be found in original claims 2, 3, and 6 which lead to some of the confusion regarding antecedent basis. The claims have otherwise been amended to comply with proper antecedent basis in dependent claims.

Accordingly, allowance is respectfully solicited. However, should the examiner have any further problems with, or further reasonable suggestions for, the claims, he should feel free to contact the undersigned.

**A check in the amount of \$110.00 is attached to cover the required one month extension fee.**

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11-0345. Please credit

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any excess fees to such deposit account.

Respectfully submitted,

KEIL & WEINKAUF

A handwritten signature in cursive script, reading "Norman Torchin".

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION**

Amend the paragraph on page 2, lines 19-26, as follows:

R<sup>2</sup> is hydrogen, chlorine, bromine, iodine, fluorine, CF<sub>3</sub>, nitro, NHCOR<sup>21</sup>, [NR<sup>22</sup>R<sup>23</sup>OH] NR<sup>22</sup>R<sup>23</sup>, OH, O-C<sub>1</sub>-C<sub>4</sub>-alkyl, O-C<sub>1</sub>-C<sub>4</sub>-alkylphenyl, NH<sub>2</sub>, phenyl, it also being possible for the phenyl rings to be substituted by at most two radicals R<sup>24</sup>, and R<sup>21</sup> and R<sup>22</sup> independently of one another are hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl and C<sub>1</sub>-C<sub>6</sub>-alkyl, O-C<sub>1</sub>-C<sub>4</sub>-alkyl, chlorine, bromine, iodine, fluorine, CF<sub>3</sub>, nitro NH<sub>2</sub>, and

Delete the material from page 6, line 42 to page 7, line 1:

~~R<sup>31</sup> is hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, (CH<sub>2</sub>)<sub>t</sub>-K and~~

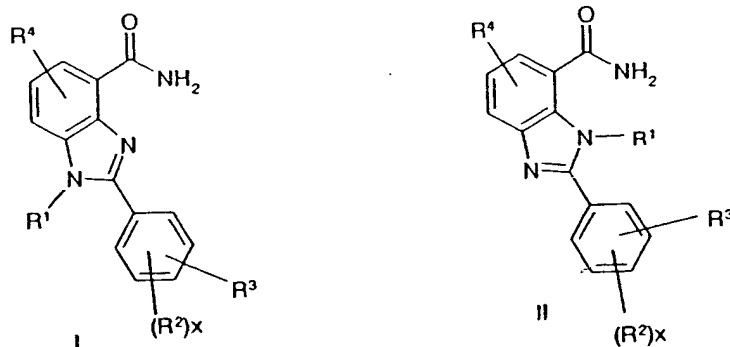
~~R<sup>32</sup> is hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, CO-R<sup>\*</sup>, SO<sub>2</sub>-R<sup>\*</sup>, (C=N)-R<sup>\*</sup>, CO-OR<sup>\*</sup>,  
CO-NHR<sup>\*</sup> and (C=N)-NHR<sup>\*</sup> and~~

~~R<sup>33</sup> is hydrogen and C<sub>1</sub>-C<sub>4</sub>-alkyl and~~

**IN THE CLAIMS**

Amend claims 1, 2, 3, 7 and 8 as follows:

1. (twice amended) A compound of the formula I or II



in which

- $R^1$  is hydrogen, or branched and unbranched  $C_1$ - $C_6$ -alkyl, it also being possible for one C atom of the alkyl radical to carry  $OR^{11}$  or a group  $R^5$ , where  $R^{11}$  is hydrogen or  $C_1$ - $C_4$ -alkyl, and
- $R^2$  is hydrogen, chlorine, bromine, iodine, fluorine,  $CF_3$ , nitro,  $NHCOR^{21}$ ,  $[NR^{22}R^{23}OH]$ ,  $NR^{22}R^{23}$ ,  $OH$ ,  $O-C_1-C_4$ -alkyl,  $O-C_1-C_4$ -alkylphenyl,  $NH_2$ , CH, a straight or branched  $C_1$  to  $C_2$ -alkyl,  $OR^{21}$  or phenyl, it also being possible for the phenyl rings to be substituted by at most two radicals  $R^{24}$ , and  $R^{21}$  and  $R^{22}$  independently of one another are hydrogen or  $C_1$ - $C_4$ -alkyl and  $R^{23}$  is hydrogen,  $C_1$ - $C_4$ -alkyl or phenyl, and  $R^{24}$  is  $OH$ ,  $C_1$ - $C_6$ -alkyl,  $O-C_1-C_4$ -alkyl, chlorine, bromine, iodine, fluorine,  $CF_3$ , nitro or  $NH_2$ , and
- $x$  may be 0, 1 or 2 and
- $R^3$  is  $-D-(F^1)_p-(E)_q-(F^2)_r-G$ , where  $p$ ,  $q$  and  $r$  may not simultaneously be 0, or is  $-E-(D)_u-(F^2)_s-(G)_v$ , it also being possible for the radical  $E$  to be substituted by one or two radicals  $A$ , and if  $v = 0$ ,  $E$  is imidazole, pyrrole,

pyridine, pyrimidine, piperazine, pyrazine, pyrrolidine or piperidine, or  $R^3$  is

B and

$R^4$  is hydrogen, chlorine, fluorine, bromine, iodine, branched and unbranched  $C_1$ - $C_6$ -alkyl, OH, nitro,  $CF_3$ , CN,  $NR^{41}R^{42}$ ,  $NH-CO-R^{43}$ , or  $O-C_1$ - $C_4$ -alkyl, where  $R^{41}$  and  $R^{42}$  independently of one another are hydrogen or  $C_1$ - $C_4$ -alkyl and  $R^{43}$  is hydrogen,  $C_1$ - $C_4$ -alkyl,  $C_1$ - $C_4$ -alkylphenyl or phenyl, and

D is S or O

E is phenyl, imidazole, pyrrole, thiophene, pyridine, pyrimidine, piperazine, pyrazine, furan, thiazole, isoxazole, pyrrolidine, piperidine, or trihydroazepine and

$F^1$  is a chain of 1 to 8 carbon atoms, it also being possible for one carbon atom of the chain to carry an OH or  $O-C_1$ - $C_4$ -alkyl group and

$F^2$  is a chain of 1 to 8 carbon atoms, it also being possible for one carbon atom of the chain to carry an OH or  $O-C_1$ - $C_4$ -alkyl group and

p may be 0 or 1

q may be 0 or 1, and

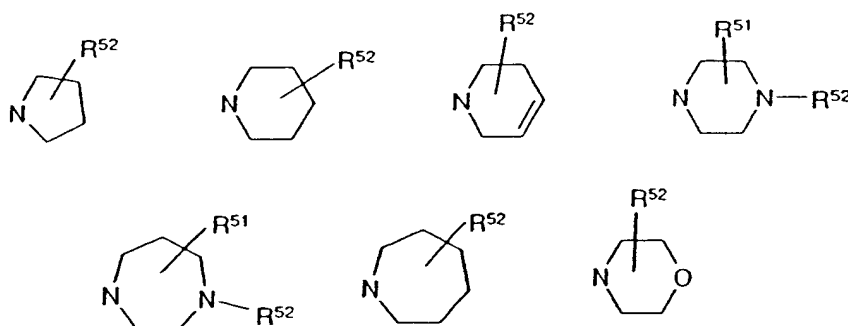
r may be 0 or 1 and

s may be 0 or 1

u may be 0 or 1

v may be 0 or 1

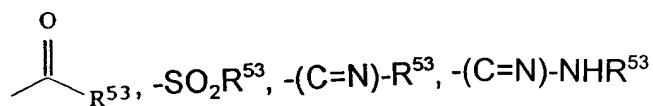
G may be  $NR^{51}R^{52}$  or



and

$R^{51}$  is hydrogen or branched and unbranched  $C_1$ - $C_6$ -alkyl, or  $(CH_2)_t$ -K and

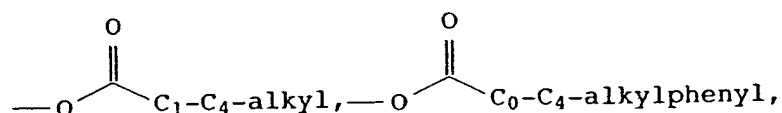
$R^{52}$  is hydrogen, branched and unbranched [C1-C6-alkyl] C1-C6-alkyl, phenyl, -



in which

$R^{53}$  may be branched or unbranched O- $C_1$ - $C_6$ -alkyl, phenyl, or branched or unbranched  $C_1$ - $C_4$ -alkylphenyl, where in the case of  $R^{52}$  and  $R^{53}$ , independently of one another, one hydrogen of the  $C_1$ - $C_6$ -alkyl radical may be substituted by one of the following radicals: OH, O- $C_1$ - $C_4$ -alkyl, cyclohexyl, cyclopentyl, tetrahydronaphthyl, cyclopropyl, cyclobutyl, cycloheptyl, naphthyl and phenyl, it also being possible for the carbocycles of the radicals  $R^{52}$  and  $R^{53}$  independently of one another to carry one or two of the following radicals: branched or unbranched  $C_1$ - $C_6$ -alkyl, branched or unbranched O- $C_1$ - $C_4$ -alkyl, OH, F, [C1] Cl, Br, I,  $CF_3$ ,

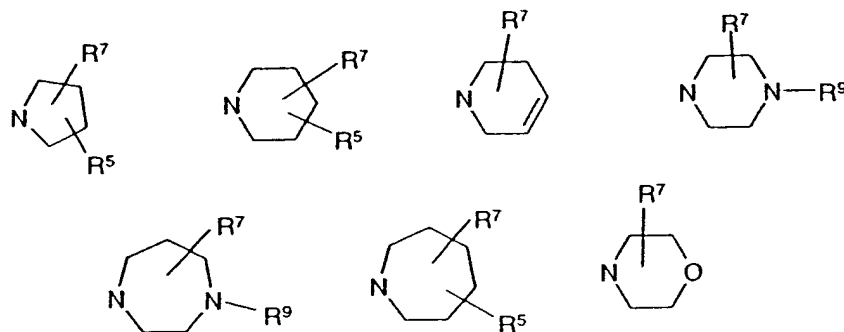
NO<sub>2</sub>, NH<sub>2</sub>, CN, COOH, COOC<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkylamino, [CCl<sub>3</sub>] CCl<sub>3</sub>,  
C<sub>1</sub>-C<sub>4</sub>-dialkylamino, SO<sub>2</sub>-C<sub>1</sub>-C<sub>4</sub>-alkyl, SO<sub>2</sub>phenyl, CONH<sub>2</sub>, CONH-C<sub>1</sub>-C<sub>4</sub>-  
alkyl, CONHphenyl, CONH-C<sub>1</sub>-C<sub>4</sub>-alkylphenyl, NHSO<sub>2</sub>-C<sub>1</sub>-C<sub>4</sub>-alkyl,  
NHSO<sub>2</sub>phenyl, S-C<sub>1</sub>-C<sub>4</sub>-alkyl,



CHO, CH<sub>2</sub>-O-C<sub>1</sub>-C<sub>4</sub>-alkyl, -CH<sub>2</sub>O-C<sub>1</sub>-C<sub>4</sub>-alkylphenyl, -CH<sub>2</sub>OH, -SO-C<sub>1</sub>-C<sub>4</sub>-  
alkyl, -SO-C<sub>1</sub>-C<sub>4</sub>-alkylphenyl, -SO<sub>2</sub>NH<sub>2</sub>, -SO<sub>2</sub>NH-C<sub>1</sub>-C<sub>4</sub>-alkyl

or two radicals form a bridge -O-(CH<sub>2</sub>)<sub>1,2</sub>-O-,

B may be



and

A may be hydrogen, chlorine, bromine, iodine, fluorine, CF<sub>3</sub>, nitro, OH, O-C<sub>1</sub>-

C<sub>4</sub>-alkyl, O-C<sub>1</sub>-C<sub>4</sub>-alkylphenyl, NH<sub>2</sub>, branched and unbranched C<sub>1</sub>-C<sub>6</sub>-alkyl, CN, or NH-CO-R<sup>33</sup>, where R<sup>33</sup> is hydrogen, C<sub>1</sub>-C<sub>4</sub>-alkyl or phenyl and

[ R<sup>31</sup> is hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, or (CH<sub>2</sub>)<sub>t</sub>-K and

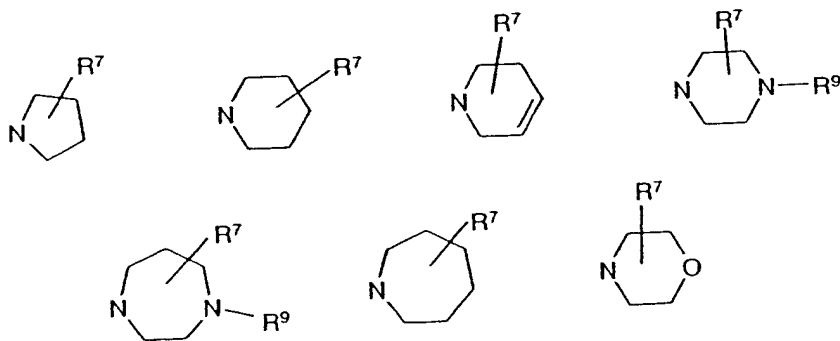
R<sup>32</sup> is hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, -CO-R<sup>8</sup>, SO<sub>2</sub>-R<sup>8</sup>, -(C=N)=R<sup>8</sup>-CO-NHR<sup>8</sup>, -CO-OR<sup>8</sup> or -(C=N)-NHR<sup>8</sup> and

R<sup>33</sup> is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl and ]

t is 0,1,2,3, or 4 and

K is a phenyl [which may carry at most two substituents on the being, comprising NR<sup>k1</sup>R<sup>k2</sup> wherein R<sup>k1</sup> and R<sup>k2</sup> re as defined for R<sup>41</sup> and R<sup>42</sup> respectively, NH-C1-C<sub>4</sub>-alkylphenyl] optionally having at most two substitutents on the ring. R<sup>k1</sup> and/or R<sup>k2</sup> are any of the radicals defined for R<sup>41</sup> and R<sup>42</sup>, respectively. or NH-C<sub>1</sub>-C<sub>4</sub>-alkylphenyl, pyrrolidine, piperidine, 1,2, 5, 6-tetrahydropyridine, morpholine, trihydroazepine, piperazine, which may also be substituted by an alkyl radical C<sub>1</sub>-C<sub>6</sub>-alkyl, or homopiperazine, which may also be substituted by an alkyl radical C<sub>1</sub>-C<sub>6</sub>-alkyl, and

R<sup>5</sup> may be hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, or NR<sub>7</sub>R<sub>9</sub> and





and

$R^7$  is hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_1$ - $C_4$ -alkylphenyl, or phenyl, it also being possible for the rings to be substituted by up to two radicals  $R^{71}$ , and

$R^{71}$  is OH,  $C_1$ - $C_6$ -alkyl, O- $C_1$ - $C_4$ -alkyl, chlorine, bromine, iodine, fluorine,  $CF_3$ , nitro, or  $NH_2$ , and

$R^8$  is hydrogen,  $C_1$ - $C_6$ -alkyl, phenyl, or  $C_1$ - $C_4$ -alkylphenyl, it also being possible for the ring to be substituted by up to two radicals  $R^{81}$ , and

$R^{81}$  is OH,  $C_1$ - $C_6$ -alkyl, O- $C_1$ - $C_4$ -alkyl, chlorine, bromine, iodine, fluorine,  $CF_3$ , nitro, or  $NH_2$  and

$R^9$  is hydrogen,  $COCH_3$ , CO-O- $C_1$ - $C_4$ -alkyl,  $COCF_3$ , branched and unbranched  $C_1$ - $C_6$ -alkyl, it being possible for one or two hydrogens of the  $C_1$ - $C_6$ -alkyl radical to be substituted in each case by one of the following radicals: OH, O- $C_1$ - $C_4$ -alkyl and phenyl, and for the phenyl ring also to carry one or two of the following radicals: iodine, chlorine, bromine, fluorine, branched and unbranched  $C_1$ - $C_6$ -alkyl, nitro, amino,  $C_1$ - $C_4$ -alkylamino,  $C_1$ - $C_4$ -dialkylamino, OH, O- $C_1$ - $C_4$ -alkyl, CN,  $CF_3$ , or  $SO_2$ - $C_1$ - $C_4$ -alkyl,

or a tautomeric form, a possible enantiomeric or diastereomeric form, a prodrug or pharmacologically tolerated salt thereof.

2. (twice amended) A compound of the formula I or II as claimed in claim 1 in which

$R^1$  is hydrogen, branched and unbranched  $C_1$ - $C_6$ -alkyl, it also being possible for one C atom of the alkyl radical to carry  $OR^{11}$  or a group  $R^5$ , where

$R^{11}$  is hydrogen or  $C_1$ - $C_4$ -alkyl, and

$R^2$  is hydrogen, chlorine, fluorine, bromine, iodine, branched and unbranched  $C_1$ - $C_6$ -alkyl, nitro,  $CF_3$ , CN,  $[NR^{21}R^{22}, NH-CO-R^{23}]$   $NR^{22}R^{23}, NH-CO-R^{21}$ ,  $OR^{21}$ , where

$R^{21}$  and  $R^{22}$  are, independently of one another, hydrogen or  $C_1$ - $C_4$ -alkyl, [arid] and

$R^{23}$  is hydrogen,  $C_1$ - $C_4$ -alkyl or phenyl, and

$R^3$  is  $[-O-(CH_2)_o-(CHR^{31})_m-(CH_2)_n-R^5]$   $-O-(CH_2)_o-(CHR^{31})_m-(CH_2)_n-G$ , where

$R^{31}$  is hydrogen,  $C_1$ - $C_4$ -alkyl, OH and  $O-C_1$ - $C_4$ -alkyl,

$m, o$  are, independently of one another, 0, 1 or 2, and

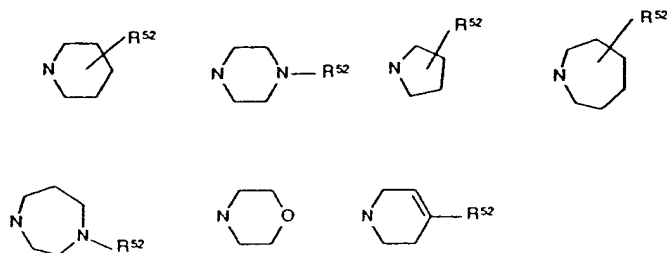
$n$  is 1, 2, 3 or 4 and

$R^4$  is hydrogen, branched and unbranched  $C_1$ - $C_6$ -alkyl, chlorine, bromine, fluorine, nitro, cyano,  $NR^{41}R^{42}$   $NH-CO-R^{43}$   $OR^{41}$  where

$R^{41}$  and  $R^{42}$  are, independently of one another, hydrogen or  $C_1$ - $C_4$ -alkyl, and

$R^{43}$  is  $C_1$ - $C_4$ -alkyl or phenyl, and

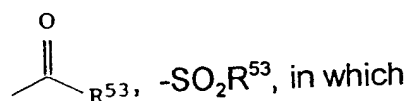
$[R^5]$  G is  $NR^{51}R^{52}$  or one of the following radicals



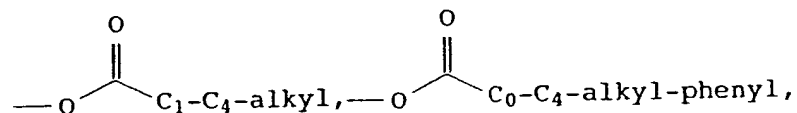
where

$R^{51}$  is hydrogen and branched and unbranched  $C_1$ - $C_6$ -alkyl, and

$R^{52}$  is hydrogen, branched and unbranched  $C_1$ - $C_6$ -alkyl phenyl,



$R^{53}$  is branched or unbranched O- $C_1$ - $C_6$ -alkyl, phenyl, branched or unbranched  $C_1$ - $C_4$ -alkyl-phenyl, where one hydrogen in the  $C_1$ - $C_6$ -alkyl radical in  $R^{52}$  and  $R^{53}$  [can] are, independently of one another, optionally [be] substituted by one of the following radicals: OB, O- $C_1$ - $C_4$ -alkyl, cyclohexyl, cyclopentyl, tetrahydronaphthyl, cyclopropyl, cyclobutyl, cycloheptyl, naphthyl and phenyl, where the carbocycles of the  $R^{52}$  and  $R^{53}$  radicals may also, independently of one another, carry one or two of the following radicals: branched or unbranched  $C_1$ - $C_6$ -alkyl, branched or unbranched O- $C_1$ - $C_4$ -alkyl, OH, F, Cl, Br, I,  $\text{CF}_3$ ,  $\text{NO}_2$ ,  $\text{NH}_2$ , CN, COOH,  $\text{COOC}_1$ - $C_4$ -alkyl,  $C_1$ - $C_4$ -alkylamino,  $\text{CCl}_3$ ,  $C_1$ - $C_4$ -dialkylamino,  $\text{SO}_2$ - $C_1$ - $C_4$ -alkyl,  $\text{SO}_2$ phenyl,  $\text{CONH}_2$ ,  $\text{CONH}$ - $C_1$ - $C_4$ -alkyl,  $\text{CONH}$ phenyl,  $\text{CONH}$ - $C_1$ - $C_4$ -alkyl-phenyl,  $\text{NHSO}_2$ - $C_1$ - $C_4$ -alkyl,  $\text{NBSO}_2$ phenyl, S- $C_1$ - $C_4$ -alkyl,



CHO,  $\text{CH}_2$ -O- $C_1$ - $C_4$ -alkyl,  $-\text{CH}_2$ O- $C_1$ - $C_4$ -alkyl-phenyl,  $-\text{CH}_2$ OH,  $-\text{SO}$ - $C_1$ - $C_4$ -alkyl,  $-\text{SO}$ - $C_1$ - $C_4$ -alkyl-phenyl,  $\text{SO}_2\text{NH}_2$ ,  $-\text{SO}_2\text{NH}$ - $C_1$ - $C_4$ -alkyl and two

radicals form a bridge  $-O-(CH_2)_{1,2}-O-$ ,

or a tautomeric form, a possible enantiomeric or diastereomeric form, a prodrug or pharmacologically tolerated salt thereof.

3. (twice amended) A compound of the formula I or II as claimed in claim 1 in which

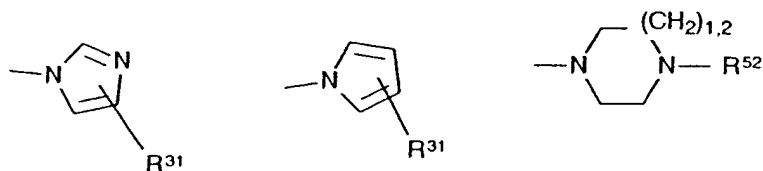
$R^1$  is hydrogen, branched and unbranched  $C_1-C_6$ -alkyl, it also being possible for one C atom of the alkyl radical to carry  $OR^{11}$  or a group  $R^5$ , where

$R^{11}$  is hydrogen or  $C_1-C_4$ -alkyl, and

$R^2$  is hydrogen, chlorine, fluorine, bromine, iodine, branched and unbranched  $C_1-C_6$ -alkyl, nitro,  $CF_3$ , CN,  $[NR^{21}R^{22}]$   $NR^{22}R^{23}$ ,  $[NH-CO-R^{23}]$   $NH-CO-R^{21}$ ,  $OR^{21}$ , where

$R^{21}$  and  $R^{22}$  independently of one another are hydrogen or  $C_1-C_4$ -alkyl and

$R^3$  is



and

$R^{31}$  is hydrogen, CHO and  $[-(CH_2)_o-(CHR^{32})_m-(CH_2)_n-R^5]$   $-(CH_2)_o-(CHR^{32})_m-$   $(CH_2)_n-G$ , where  $R^{32}$  is hydrogen,  $C_1-C_4$ -alkyl, OH and  $O-C_1-C_4$ -alkyl,  $m, o$  independently of one another are 0, 1 or 2 and  $n$  is 1, 2, 3 or 4, and

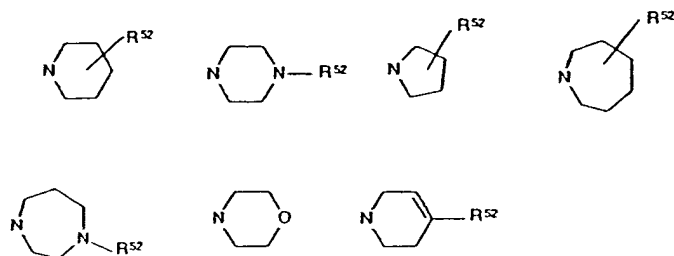
$R^4$  is hydrogen, branched and unbranched  $C_1-C_6$ -alkyl, chlorine, bromine,

fluorine, nitro, cyano,  $\text{NR}^{41}\text{R}^{42}\text{NH-CO-R}^{43}$ ,  $\text{OR}^{41}$ , where

$\text{R}^{41}$  and  $\text{R}^{42}$  independently of one another are hydrogen or  $\text{C}_1\text{-C}_4$ -alkyl and

$\text{R}^{43}$  is  $\text{C}_1\text{-C}_4$ -alkyl or phenyl, and

$[\text{R}^5] \text{ G}$  is  $\text{NR}^{51}\text{R}^{52}$  or one of the radicals below



where

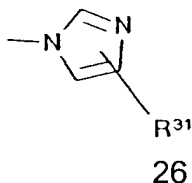
$\text{R}^{51}$  is hydrogen and branched and unbranched and  $\text{C}_1\text{-C}_6$ -alkyl and

$\text{R}^{52}$  is hydrogen,  $\text{COCH}_3$ ,  $\text{CO-O-C}_1\text{-C}_4$ -alkyl,  $\text{COCF}_3$ , branched and unbranched  $\text{C}_1\text{-C}_6$ -alkyl, it being possible for one hydrogen of the  $\text{C}_1\text{-C}_6$ -alkyl radical to be substituted by one of the following radicals: OH,  $\text{O-C}_1\text{-C}_4$ -alkyl and phenyl and for the phenyl ring also to carry one or two of the following radicals: chlorine, bromine, fluorine, branched and unbranched  $\text{C}_1\text{-C}_4$ -alkyl, nitro, amino,  $\text{C}_1\text{-C}_4$ -alkylamino,  $\text{C}_1\text{-C}_4$ -dialkylamino, OH,  $\text{O-C}_1\text{-C}_4$ -alkyl, CN,  $\text{SO}_2\text{-C}_1\text{-C}_4$ -alkyl,

or a tautomeric form, a possible enantiomeric or diastereomeric form, a prodrug or pharmacologically tolerated salt thereof.

7. (amended) A compound as claimed in claim 1 where

(i) for  $\text{R}^3$  being

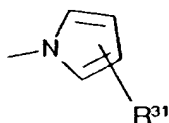


$R^{31}$  is hydrogen or  $[-(CH_2)_p-R^5]$   $-(CH_2)_p-G$ , where

$p$  is 1 or 2 and

$[R^{52}]$  may be hydrogen, branched and unbranched  $C_1-C_6$ -alkyl, where one hydrogen of the  $C_1-C_6$ -alkyl radical may be substituted by one of the following radicals: OH, O- $C_1-C_4$ -alkyl and phenyl, and where the phenyl ring may also carry one or two of the following radicals: chlorine, bromine, fluorine, branched and unbranched  $C_1-C_4$ -alkyl, nitro, amino,  $C_1-C_4$ -alkylamino,  $C_1-C_4$ -dialkylamino, OH, O- $C_1-C_4$ -alkyl, CN,  $SO_2-C_1-C_4$ -alkyl;]

(ii) for  $R^3$  being

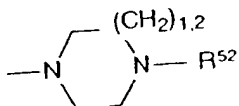


$R^{31}$  is hydrogen or  $-(CH_2)_p-R^5$ , where

$p$  is 1 or 2 and

$R^{52}$  may be hydrogen, branched and unbranched  $C_1-C_6$ -alkyl, where one hydrogen of the  $C_1-C_6$ -alkyl radical may be substituted by one of the following radicals: OH, O- $C_1-C_4$ -alkyl and phenyl, and where the phenyl ring may also carry one or two of the following radicals: chlorine, bromine, fluorine, branched and unbranched  $C_1-C_4$ -alkyl, nitro, amino,  $C_1-C_4$ -alkylamino,  $C_1-C_4$ -dialkylamino, OH, O- $C_1-C_4$ -alkyl, CN,  $SO_2-C_1-C_4$ -alkyl;

and (iii) for  $R^3$  being



[where  $R^{52}$  is hydrogen, branched and unbranched  $C_1$ - $C_6$ -alkyl, where one hydrogen of the  $C_1$ - $C_6$ -alkyl radical may be substituted by one of the following radicals: OH,

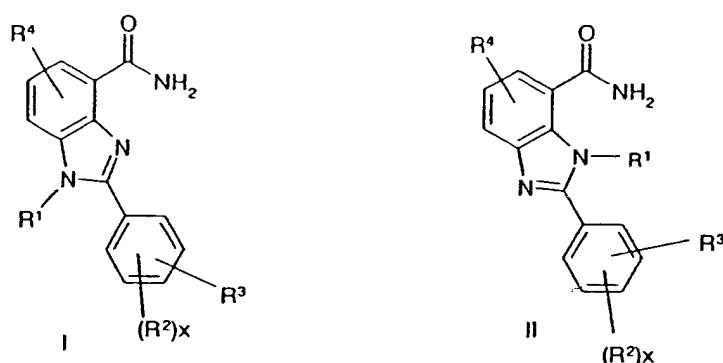
O- $C_1$ - $C_4$ -alkyl and phenyl, and where the phenyl ring may also carry one or two of the following radicals: chlorine, bromine, fluorine, branched and unbranched  $C_1$ - $C_4$ -alkyl, ]

nitro, amino,  $C_1$ - $C_4$ -alkylamino,  $C_1$ - $C_4$ -dialkylamino, OH, O- $C_1$ - $C_4$ -alkyl, CN,  $SO_2$ - $C_1$ - $C_4$ -alkyl.

8. (amended) A compound as claimed in claim 1, where  $R^3$  is  $[-O-(CH_2)_p-R^5] -O-(CH_2)_p-$   
 $\underline{G}$  with p equal to 2, 3 or 4.

**COPY OF ALL CLAIMS**

1. (twice amended) A compound of the formula I or II



in which

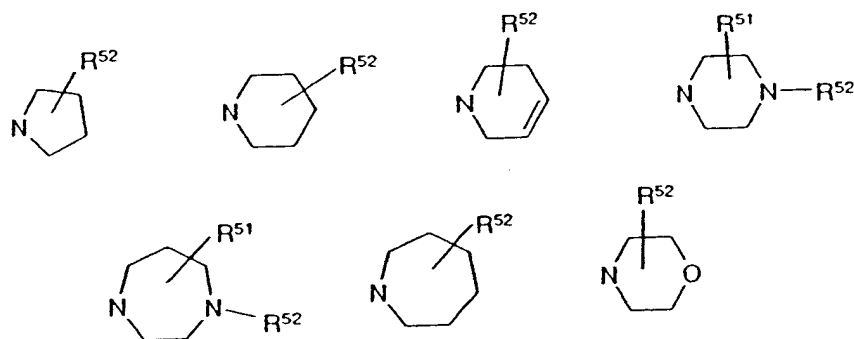
- R<sup>1</sup> is hydrogen, or branched and unbranched C<sub>1</sub>-C<sub>6</sub>-alkyl, it also being possible for one C atom of the alkyl radical to carry OR<sup>11</sup> or a group R<sup>5</sup>, where R<sup>11</sup> is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl, and
- R<sup>2</sup> is hydrogen, chlorine, bromine, iodine, fluorine, CF<sub>3</sub>, nitro, NHCOR<sup>21</sup>, NR<sup>22</sup>R<sup>23</sup>, OH, O-C<sub>1</sub>-C<sub>4</sub>-alkyl, O-C<sub>1</sub>-C<sub>4</sub>-alkylphenyl, NH<sub>2</sub>, CH, a straight or branched C<sub>1</sub> to C<sub>2</sub>-alkyl, OR<sup>21</sup> or phenyl, it also being possible for the phenyl rings to be substituted by at most two radicals R<sup>24</sup>, and R<sup>21</sup> and R<sup>22</sup> independently of one another are hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl and R<sup>23</sup> is hydrogen, C<sub>1</sub>-C<sub>4</sub>-alkyl or phenyl, and R<sup>24</sup> is OH, C<sub>1</sub>-C<sub>6</sub>-alkyl, O-C<sub>1</sub>-C<sub>4</sub>-alkyl, chlorine, bromine, iodine, fluorine, CF<sub>3</sub>, nitro or NH<sub>2</sub>, and
- x may be 0, 1 or 2 and
- R<sup>3</sup> is -D-(F<sup>1</sup>)<sub>p</sub>-(E)<sub>q</sub>-(F<sup>2</sup>)<sub>r</sub>-G, where p, q and r may not simultaneously be 0, or



- is  $-E-(D)_u-(F^2)_s-(G)_v$ , it also being possible for the radical E to be substituted by one or two radicals A, and if  $v = 0$ , E is imidazole, pyrrole, pyridine, pyrimidine, piperazine, pyrazine, pyrrolidine or piperidine, or  $R^3$  is B and
- $R^4$  is hydrogen, chlorine, fluorine, bromine, iodine, branched and unbranched  $C_1$ - $C_6$ -alkyl, OH, nitro,  $CF_3$ , CN,  $NR^{41}R^{42}$ ,  $NH-CO-R^{43}$ , or  $O-C_1$ - $C_4$ -alkyl, where  $R^{41}$  and  $R^{42}$  independently of one another are hydrogen or  $C_1$ - $C_4$ -alkyl and  $R^{43}$  is hydrogen,  $C_1$ - $C_4$ -alkyl,  $C_1$ - $C_4$ -alkylphenyl or phenyl, and
- D is S or O
- E is phenyl, imidazole, pyrrole, thiophene, pyridine, pyrimidine, piperazine, pyrazine, furan, thiazole, isoxazole, pyrrolidine, piperidine, or trihydroazepine and
- $F^1$  is a chain of 1 to 8 carbon atoms, it also being possible for one carbon atom of the chain to carry an OH or  $O-C_1$ - $C_4$ -alkyl group and
- $F^2$  is a chain of 1 to 8 carbon atoms, it also being possible for one carbon atom of the chain to carry an OH or  $O-C_1$ - $C_4$ -alkyl group and
- p may be 0 or 1
- q may be 0 or 1, and
- r may be 0 or 1 and
- s may be 0 or 1
- u may be 0 or 1

v may be 0 or 1

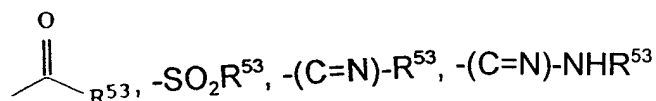
G may be  $\text{NR}^{51}\text{R}^{52}$  or



and

$\text{R}^{51}$  is hydrogen or branched and unbranched  $\text{C}_1\text{-C}_6$ -alkyl, or  $(\text{CH}_2)_t\text{-K}$  and

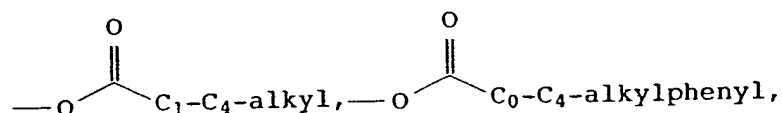
$\text{R}^{52}$  is hydrogen, branched and unbranched  $\text{C}_1\text{-C}_6$ -alkyl, phenyl,



in which

$\text{R}^{53}$  may be branched or unbranched  $\text{O-C}_1\text{-C}_6$ -alkyl, phenyl, or branched or unbranched  $\text{C}_1\text{-C}_4$ -alkylphenyl, where in the case of  $\text{R}^{52}$  and  $\text{R}^{53}$ , independently of one another, one hydrogen of the  $\text{C}_1\text{-C}_6$ -alkyl radical may be substituted by one of the following radicals:  $\text{OH}$ ,  $\text{O-C}_1\text{-C}_4$ -alkyl, cyclohexyl, cyclopentyl, tetrahydronaphthyl, cyclopropyl, cyclobutyl, cycloheptyl, naphthyl and phenyl, it also being possible for the

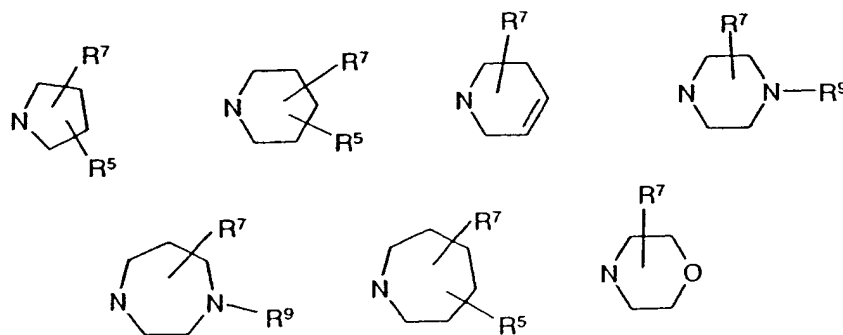
carbocycles of the radicals  $R^{52}$  and  $R^{53}$  independently of one another to carry one or two of the following radicals: branched or unbranched  $C_1$ - $C_6$ -alkyl, branched or unbranched  $O$ - $C_1$ - $C_4$ -alkyl,  $OH$ ,  $F$ ,  $Cl$ ,  $Br$ ,  $I$ ,  $CF_3$ ,  $NO_2$ ,  $NH_2$ ,  $CN$ ,  $COOH$ ,  $COOC_1$ - $C_4$ -alkyl,  $C_1$ - $C_4$ -alkylamino,  $CCl_3$ ,  $C_1$ - $C_4$ -dialkylamino,  $SO_2$ - $C_1$ - $C_4$ -alkyl,  $SO_2$ phenyl,  $CONH_2$ ,  $CONH$ - $C_1$ - $C_4$ -alkyl,  $CONH$ phenyl,  $CONH$ - $C_1$ - $C_4$ -alkylphenyl,  $NHSO_2$ - $C_1$ - $C_4$ -alkyl,  $NHSO_2$ phenyl,  $S$ - $C_1$ - $C_4$ -alkyl,



$CHO$ ,  $CH_2$ - $O$ - $C_1$ - $C_4$ -alkyl,  $-CH_2$ - $O$ - $C_1$ - $C_4$ -alkylphenyl,  $-CH_2OH$ ,  $-SO$ - $C_1$ - $C_4$ -alkyl,  $-SO$ - $C_1$ - $C_4$ -alkylphenyl,  $-SO_2NH_2$ ,  $-SO_2NH$ - $C_1$ - $C_4$ -alkyl

or two radicals form a bridge  $-O-(CH_2)_{1,2}-O-$ ,

B may be



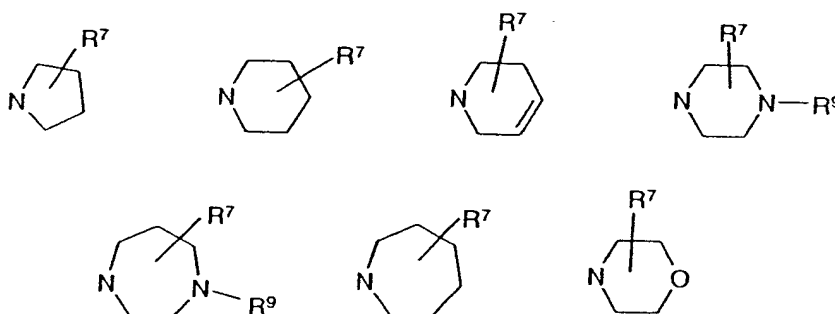
and

A may be hydrogen, chlorine, bromine, iodine, fluorine,  $\text{CF}_3$ , nitro, OH, O- $\text{C}_1$ - $\text{C}_4$ -alkyl, O- $\text{C}_1$ - $\text{C}_4$ -alkylphenyl,  $\text{NH}_2$ , branched and unbranched  $\text{C}_1$ - $\text{C}_6$ -alkyl, CN, or  $\text{NH-CO-R}^{33}$ , where  $\text{R}^{33}$  is hydrogen,  $\text{C}_1$ - $\text{C}_4$ -alkyl or phenyl and

t is 0,1,2,3, or 4 and

K is a phenyl optionally having at most two substituents on the ring,  $\text{R}^{k1}$  and/or  $\text{R}^{k2}$  are any of the radicals defined for  $\text{R}^{41}$  and  $\text{R}^{42}$ , respectively, or  $\text{NH-C}_1$ - $\text{C}_4$ -alkylphenyl, pyrrolidine, piperidine, 1,2, 5, 6-tetrahydropyridine, morpholine, trihydroazepine, piperazine, which may also be substituted by an alkyl radical  $\text{C}_1$ - $\text{C}_6$ -alkyl, or homopiperazine, which may also be substituted by an alkyl radical  $\text{C}_1$ - $\text{C}_6$ -alkyl, and

$\text{R}^5$  may be hydrogen,  $\text{C}_1$ - $\text{C}_6$ -alkyl, or  $\text{NR}_7\text{R}_9$  and



and

$\text{R}^7$  is hydrogen,  $\text{C}_1$ - $\text{C}_6$ -alkyl,  $\text{C}_1$ - $\text{C}_4$ -alkylphenyl, or phenyl, it also being possible for the rings to be substituted by up to two radicals  $\text{R}^{71}$ , and

R<sup>71</sup> is OH, C<sub>1</sub>-C<sub>6</sub>-alkyl, O-C<sub>1</sub>-C<sub>4</sub>-alkyl, chlorine, bromine, iodine, fluorine, CF<sub>3</sub>, nitro, or NH<sub>2</sub>, and

R<sup>8</sup> is hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, phenyl, or C<sub>1</sub>-C<sub>4</sub>-alkylphenyl, it also being possible for the ring to be substituted by up to two radicals R<sup>81</sup>, and

R<sup>81</sup> is OH, C<sub>1</sub>-C<sub>6</sub>-alkyl, O-C<sub>1</sub>-C<sub>4</sub>-alkyl, chlorine, bromine, iodine, fluorine, CF<sub>3</sub>, nitro, or NH<sub>2</sub> and

R<sup>9</sup> is hydrogen, COCH<sub>3</sub>, CO-O-C<sub>1</sub>-C<sub>4</sub>-alkyl, COCF<sub>3</sub>, branched and unbranched C<sub>1</sub>-C<sub>6</sub>-alkyl, it being possible for one or two hydrogens of the C<sub>1</sub>-C<sub>6</sub>-alkyl radical to be substituted in each case by one of the following radicals: OH, O-C<sub>1</sub>-C<sub>4</sub>-alkyl and phenyl, and for the phenyl ring also to carry one or two of the following radicals: iodine, chlorine, bromine, fluorine, branched and unbranched C<sub>1</sub>-C<sub>6</sub>-alkyl, nitro, amino, C<sub>1</sub>-C<sub>4</sub>-alkylamino, C<sub>1</sub>-C<sub>4</sub>-dialkylamino, OH, O-C<sub>1</sub>-C<sub>4</sub>-alkyl, CN, CF<sub>3</sub>, or SO<sub>2</sub>-C<sub>1</sub>-C<sub>4</sub>-alkyl,

or a tautomeric form, a possible enantiomeric or diastereomeric form, a prodrug or pharmacologically tolerated salt thereof.

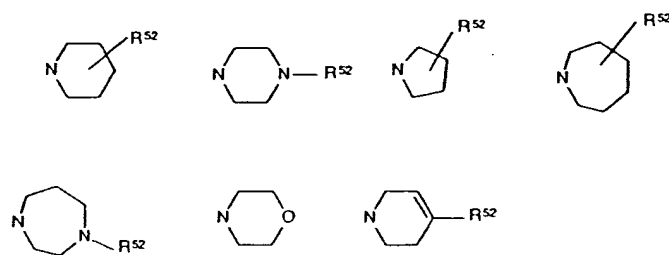
2. (twice amended) A compound of the formula I or II as claimed in claim 1 in which

R<sup>1</sup> is hydrogen, branched and unbranched C<sub>1</sub>-C<sub>6</sub>-alkyl, it also being possible for one C atom of the alkyl radical to carry OR<sup>11</sup> or a group R<sup>5</sup>, where

R<sup>11</sup> is hydrogen or C<sub>1</sub>-C<sub>4</sub>-alkyl, and

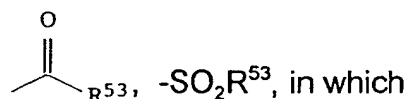
R<sup>2</sup> is hydrogen, chlorine, fluorine, bromine, iodine, branched and unbranched

$C_1-C_6$ -alkyl, nitro,  $CF_3$ , CN,  $NR^{22}R^{23}$ ,  $NH-CO-R^{21}$ ,  $OR^{21}$ , where  
 $R^{21}$  and  $R^{22}$  are, independently of one another, hydrogen or  $C_1-C_4$ -alkyl, and  
 $R^{23}$  is hydrogen,  $C_1-C_4$ -alkyl or phenyl, and  
 $R^3$  is  $-O-(CH_2)_o-(CHR^{31})_m-(CH_2)_n-G$ , where  
 $R^{31}$  is hydrogen,  $C_1-C_4$ -alkyl, OH and  $O-C_1-C_4$ -alkyl,  
 $m, o$  are, independently of one another, 0, 1 or 2, and  
 $n$  is 1, 2, 3 or 4 and  
 $R^4$  is hydrogen, branched and unbranched  $C_1-C_6$ -alkyl, chlorine, bromine,  
 fluorine, nitro, cyano,  $NR^{41}R^{42}$ ,  $NH-CO-R^{43}$ ,  $OR^{41}$  where  
 $R^{41}$  and  $R^{42}$  are, independently of one another, hydrogen or  $C_1-C_4$ -alkyl, and  
 $R^{43}$  is  $C_1-C_4$ -alkyl or phenyl, and  
 $G$  is  $NR^{51}R^{52}$  or one of the following radicals

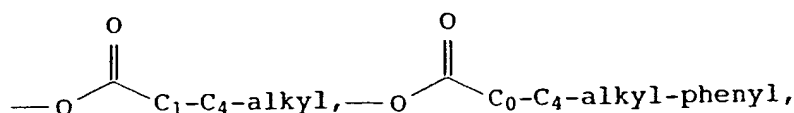


where

$R^{51}$  is hydrogen and branched and unbranched  $C_1-C_6$ -alkyl, and  
 $R^{52}$  is hydrogen, branched and unbranched  $C_1-C_6$ -alkyl, phenyl,



$R^{53}$  is branched or unbranched  $O-C_1-C_6$ -alkyl, phenyl, branched or unbranched  $C_1-C_4$ -alkyl-phenyl, where one hydrogen in the  $C_1-C_6$ -alkyl radical in  $R^{52}$  and  $R^{53}$  are, independently of one another, optionally substituted by one of the following radicals: OB,  $O-C_1-C_4$ -alkyl, cyclohexyl, cyclopentyl, tetrahydronaphthyl, cyclopropyl, cyclobutyl, cycloheptyl, naphthyl and phenyl, where the carbocycles of the  $R^{52}$  and  $R^{53}$  radicals may also, independently of one another, carry one or two of the following radicals: branched or unbranched  $C_1-C_6$ -alkyl, branched or unbranched  $O-C_1-C_4$ -alkyl, OH, F, Cl, Br, I,  $CF_3$ ,  $NO_2$ ,  $NH_2$ , CN, COOH,  $COOC_1-C_4$ -alkyl,  $C_1-C_4$ -alkylamino,  $CCl_3$ ,  $C_1-C_4$ -dialkylamino,  $SO_2-C_1-C_4$ -alkyl,  $SO_2$ phenyl,  $CONH_2$ ,  $CONH-C_1-C_4$ -alkyl,  $CONH$ phenyl,  $CONH-C_1-C_4$ -alkyl-phenyl,  $NHSO_2-C_1-C_4$ -alkyl,  $NBSO_2$ phenyl,  $S-C_1-C_4$ -alkyl,



CHO,  $CH_2-O-C_1-C_4$ -alkyl,  $-CH_2O-C_1-C_4$ -alkyl-phenyl,  $-CH_2OH$ ,  $-SO-C_1-C_4$ -alkyl,  $-SO-C_1-C_4$ -alkyl-phenyl,  $SO_2NH_2$ ,  $-SO_2NH-C_1-C_4$ -alkyl and two radicals form a bridge  $-O-(CH_2)_{1,2}-O-$ ,

or a tautomeric form, a possible enantiomeric or diastereomeric form, a prodrug or pharmacologically tolerated salt thereof.

3. (twice amended) A compound of the formula I or II as claimed in claim 1 in which

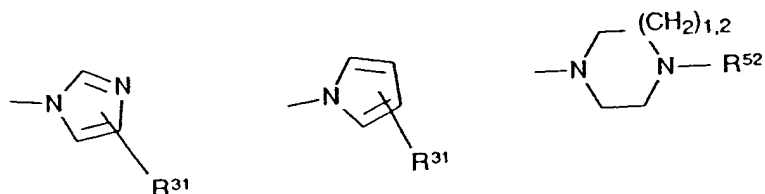
$R^1$  is hydrogen, branched and unbranched  $C_1$ - $C_6$ -alkyl, it also being possible for one C atom of the alkyl radical to carry  $OR^{11}$  or a group  $R^5$ , where

$R^{11}$  is hydrogen or  $C_1$ - $C_4$ -alkyl, and

$R^2$  is hydrogen, chlorine, fluorine, bromine, iodine, branched and unbranched  $C_1$ - $C_6$ -alkyl, nitro,  $CF_3$ ,  $CN$ ,  $NR^{22}R^{23}$ ,  $NH-CO-R^{21}$ ,  $OR^{21}$ , where

$R^{21}$  and  $R^{22}$  independently of one another are hydrogen or  $C_1$ - $C_4$ -alkyl  
and

$R^3$  is



and

$R^{31}$  is hydrogen,  $CHO$  and  $-(CH_2)_o-(CHR^{32})_m-(CH_2)_n-G$ , where  $R^{32}$  is hydrogen,  $C_1$ - $C_4$ -alkyl,  $OH$  and  $O-C_1$ - $C_4$ -alkyl,  $m, o$  independently of one another are 0, 1 or 2 and  $n$  is 1, 2, 3 or 4, and

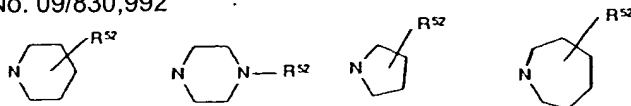
$R^4$  is hydrogen, branched and unbranched  $C_1$ - $C_6$ -alkyl, chlorine, bromine, fluorine, nitro, cyano,  $NR^{41}R^{42}$ ,  $NH-CO-R^{43}$ ,  $OR^{41}$ , where

$R^{41}$  and  $R^{42}$  independently of one another are hydrogen or  $C_1$ - $C_4$ -alkyl and

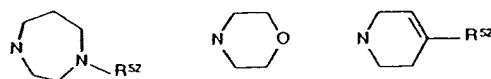
$R^{43}$  is  $C_1$ - $C_4$ -alkyl or phenyl, and

$G$  is  $NR^{51}R^{52}$  or one of the radicals below





where

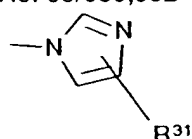


$R^{51}$  is hydrogen and branched and unbranched and  $C_1$ - $C_6$ -alkyl and

$R^{52}$  is hydrogen,  $COCH_3$ ,  $CO-O-C_1-C_4$ -alkyl,  $COCF_3$ , branched and unbranched  $C_1$ - $C_6$ -alkyl, it being possible for one hydrogen of the  $C_1$ - $C_6$ -alkyl radical to be substituted by one of the following radicals: OH,  $O-C_1-C_4$ -alkyl and phenyl and for the phenyl ring also to carry one or two of the following radicals: chlorine, bromine, fluorine, branched and unbranched  $C_1$ - $C_4$ -alkyl, nitro, amino,  $C_1$ - $C_4$ -alkylamino,  $C_1$ - $C_4$ -dialkylamino, OH,  $O-C_1-C_4$ -alkyl, CN,  $SO_2-C_1-C_4$ -alkyl,

or a tautomeric form, a possible enantiomeric or diastereomeric form, a prodrug or pharmacologically tolerated salt thereof.

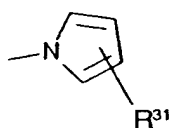
4. A compound as claimed in claim 1, where  $R^2$  is in position 3 and  $R^3$  is in position 4 or  $R^2$  is in position 4 and  $R^3$  is in position 3 relative to the benzimidazole ring.
5. A compound as claimed in claim 1, where  $R^1$  and  $R^4$  are hydrogen.
6. A compound as claimed in claim 1, where  
 $R^2$  is hydrogen, branched or unbranched  $C_1$ - $C_6$ -alkyl, nitro, CN,  $NH_2$ ,  $O-C_1-C_4$ -alkyl.
7. (amended) A compound as claimed in claim 1 where  
 (i) for  $R^3$  being



$R^{31}$  is hydrogen or  $-(CH_2)_p-G$ , where

$p$  is 1 or 2 and

(ii) for  $R^3$  being

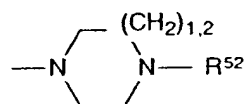


$R^{31}$  is hydrogen or  $-(CH_2)_p-R^5$ , where

$p$  is 1 or 2 and

$R^{52}$  may be hydrogen, branched and unbranched  $C_1-C_6$ -alkyl, where one hydrogen of the  $C_1-C_6$ -alkyl radical may be substituted by one of the following radicals: OH, O- $C_1-C_4$ -alkyl and phenyl, and where the phenyl ring may also carry one or two of the following radicals: chlorine, bromine, fluorine, branched and unbranched  $C_1-C_4$ -alkyl, nitro, amino,  $C_1-C_4$ -alkylamino,  $C_1-C_4$ -dialkylamino, OH, O- $C_1-C_4$ -alkyl, CN,  $SO_2-C_1-C_4$ -alkyl;

and (iii) for  $R^3$  being



nitro, amino,  $C_1-C_4$ -alkylamino,  $C_1-C_4$ -dialkylamino, OH, O- $C_1-C_4$ -alkyl, CN,  $SO_2-C_1-C_4$ -alkyl.

8. (amended) A compound as claimed in claim 1, where  $R^3$  is  $-O-(CH_2)_p-G$  with  $p$  equal

to 2, 3 or 4.

9. A compound as claimed in claim 1, where  $R^5$  is a 6-membered ring and  $R^{52}$  is an optionally substituted phenyl ring.
10. A drug comprising besides conventional vehicles and ancillary substances a compound as claimed in claim 1.
11. A method for treating a disorder in which pathologically elevated PARP activities occur, said method comprising administering an effective amount of a compound of the formula I as claimed in claim 1 to a mammal suffering from said disorder.
12. The use of compounds of the formula I as claimed in claim 11 wherein the disorder is a neurodegenerative disease or involves neuronal damage.
13. The method as claimed in claim 12, wherein the neurodegenerative disease or neuronal damage is induced by ischemia, trauma or massive bleeding.
14. The method as claimed in claim 11 wherein the disorder is stroke or craniocerebral trauma.
15. The method as claimed in claim 11 wherein the disorder is Alzheimer's disease and Huntington's disease.
16. The method as claimed in claim 11 wherein the disorder is damage due to ischemia.
17. The method as claimed in claim 11 wherein the disorder is epilepsy.
18. The method as claimed in claim 11 wherein the disorder is damage to the kidneys after renal ischemia, damage caused by drug therapy or damage

resulting after kidney transplants.

19. The method as claimed in claim 11 wherein the disorder is damage to the heart after cardiac ischemia.
20. The method as claimed in claim 11 wherein the disorder is a microinfarcts.
21. The method as claimed in claim 11 wherein the disorder is under vascularization of critically narrowed coronary arteries.
22. The method as claimed in claim 11 wherein the disorder is an acute myocardial infarct and damage during an after medical or mechanical lysis thereof.
23. The method as claimed in claim 11 wherein the disorder is a tumor or metastasis I thereof.
24. The method as claimed in claim 11 wherein the disorder is sepsis of multi-organ failure.
25. The method as claimed in claim 11 wherein the disorder is an immunological disease.
26. The method as claimed in claim 11 wherein the disorder is diabetes mellitus.